

ABSTRACT

Affords high-stability, high-safety lithium secondary batteries of high energy density and superlative charge/discharge cyclability, in which shorting 5 due to the growth of dendrites from the metallic-lithium negative electrode is kept under control.

A lithium secondary battery negative-electrode component material, formed by laminating onto a substrate a metallic lithium film and an inorganic solid-electrolyte film, the lithium secondary battery negative-electrode 10 component material characterized in that the inorganic solid-electrolyte film incorporates lithium, phosphorous, sulfur, and oxygen, and is represented by the compositional formula noted below.



(Li: lithium; P: phosphorous; S: sulfur; O: oxygen), wherein the ranges of 15 the atomic fractions in the composition are:

$$0.20 \leq a \leq 0.45;$$

$$0.10 \leq b \leq 0.20;$$

$$0.35 \leq c \leq 0.60;$$

$$0.03 \leq d \leq 0.13;$$

$$20 \quad (a + b + c + d = 1).$$